

REMARKS/ARGUMENTS

Claims 1, 4, 5, 9, 16, 22, 25-28 and 30 are pending in the application. Claims 1, 4, 5, 9, 16, 22, 25-28 and 30 are amended and no claims are canceled or added. The amendments to the claims as indicated herein do not add any new matter to this application.

CLAIMS REJECTION--35 U.S.C. § 112, FIRST PARAGRAPH REJECTION

Claims 1, 4-5, 9, 16, 22, 25-28 and 30 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was allegedly not described in the specification in such a way as to enable one of ordinary skill in the art to practice the invention. This objection is respectfully traversed.

Specifically, the Office Action states that the Claim 30 limitation “wherein the registered organization and data type information is used to type-check the first function” was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art. However, the Written Specification does describe this limitation. The Written Specification states “... the DBMS completes query processing (e.g., completing any unfinished parsing and semantic analysis), including type-checking any table function output references in the query against the query duration types registered in block 211.” (*Written Specification*, p. 12, para. [0016]). As such the limitation is described in the Written Specification and the rejection is traversed.

In addition, the Office Action states the claim limitation “storing the result data obtained from the source in a format that reflects said organization and data type information” in Claims 1, 16, and 22 was not described in the specification. However, the Written Specification does describe this limitation. The Written Specification states “... DBMS extracts the query result

from the AnyDataSet-formatted container according to the query duration types registered during the compilation phase, in effect parsing each blob according to the field mapping indicated by the query duration types, and copies the extracted field-mapped components of each blob into the output buffers generated at block 211 of the compilation phase.” (*Written Specification*, pp. 12-13, para. [0017]). As such the limitation is described in the Written Specification and the rejection is traversed.

As the limitations are clearly described in the Written Specification, Applicants respectfully request reconsideration of the rejection of Claims 1, 4-5, 9, 16, 22, 25-28 and 30 under 35 U.S.C. § 112, first paragraph.

CLAIM REJECTIONS—35 U.S.C. § 103

Claims 1, 4-5, 16, 22 and 25-28 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Publication No. 2003/0191769 ("Crisan") in view of U.S. Patent No. 6,584,459 ("Chang"). This rejection is respectfully traversed.

Claims 9 and 28 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Publication No. 2003/0191769 ("Crisan") in view of U.S. Patent No. 6,584,459 ("Chang") and further in view of Srinivasan. This rejection is respectfully traversed.

Claims 25 and 30 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Publication No. 2003/0191769 ("Crisan") in view of U.S. Patent No. 6,584,459 ("Chang") and further in view of the admitted prior art of the application. This rejection is respectfully traversed.

Each of the pending claims recites at least one limitation that is not taught or suggested by the cited references.

CLAIM 1

Claim 1, as amended, recites:

before receiving a request to execute a first function, registering an association between the first function and a second function that returns the data type information for the first function
receiving a request to execute a first function to return data from a source;
in response to receiving the request to execute the first function, performing the steps of:
executing the second function to obtain data type information that specifies one or more data types of result data that should be returned for the first function;
registering the data type information;
executing the first function to obtain the result data,
storing the result data obtained from the source in a format that reflects the data type information from the second function; and
returning the result data as data having the one or more data types. (emphasis added)

At least the above-bolded portions of Claim 1 are not taught or suggested by *Crisan* in view of *Chang*, whether considered individually or in combination.

Claim 1 recites “**executing the second function to obtain data type information that specifies one or more data types of result data that should be returned for the first function**”. The Office Action alleges that *Crisan* paragraphs [0063]-[0067] teach the cited limitation in Claim 1. The Office Action does not allege that *Chang* teaches or suggests any such limitation. However, *Crisan* fails to teach “**executing the second function to obtain data type information that specifies one or more data types of result data that should be returned for the first function**”. *Crisan* paragraphs [0063]-[0067] recite, *in toto*:

The preceding function is implemented as a very simple Web service by the suppliers 73 according to emerging web service protocols. Implementing the function as a Web service allows it to be easily invoked by a wide variety of

clients. The invoking application may execute, for example, on a Unix-based system, a laptop, a mainframe, a browser or a Java application 79. However, according to the present invention the manufacturer 71 preferably invokes the application from within its database 29. Invocation is accomplished from a DB2 database with a user-defined function (UDF) 72 having the following signature:

ex 2: varchar(20) GET_PO_STATUS (URL varchar(80), PO_NUM
varchar(20))

Here the return value is the PO status and the input parameters are the URL to which the request is to be sent and the identity of the purchase order whose status is of interest. To find the status of a specific purchase order, e.g., "12345", at a supplier 73 that offers this service at http://www.Asupplier.com/GET_PO_STATUS, the following SQL statement is issued:

ex 3: values GET_PO_STATUS
(http://www.Asupplier.com/GET_PO_STATUS`-`, `12345`)

Now assume that the manufacturer 71 has a table 74 filled with outstanding purchase orders and another 76 containing information about the web service operations each supplier offers. Such tables might look like:

<u>PURCHASE ORDERS</u>			
<u>Customer</u>	<u>Supplier</u>	<u>PO_NUM</u>	<u>O_NUM</u>
C1	ASupplier	12345	a456
C1	BSupplier	12347	b456
C3	BSupplier	34656	d435

Crisan describes generating a program capable of invoking a flow of operations, where the program is capable of being initiated from an external call. Paragraphs [0063]-[0067] of *Crisan* specifically deal with invoking a user-defined function from an external call. However, each of the functions in *Crisan* **pre-define the return data type of each of the functions**. This can be seen in the definition of GET_PO_STATUS that returns the data type varchar(20). In fact, *Crisan* does not describe any function that “**obtain[s] data type information that specifies one or more data types of result data that should be returned for the first function**” as

recited in Claim 1. As such, not all limitations of Claim 1 are taught or suggested by *Crisan* or *Chang*, either individually or in combination.

Claim 1 also recites **“registering the data type information.”** The Office Action alleges that this is taught or suggested by *Crisan* in paragraph [0120]. This section states “Of course, once a table function is created, it may be utilized in a variety of ways. For instance, one may return the status of a set of flights, combine this information from other tables and web services, and *store information about this flight in a table.*” (*Crisan*, paragraphs [0120]). *Crisan* does mention “*stor[ing] information about this flight in a table,*” however, this is not the same as **“registering the data type information.”** Data type information, as recited in Claim 1, “specifies one or more data types that should be returned as result data of the first function.” There is nothing analogous to data type information mentioned within the cited section of *Crisan*, much less registering that data type information to be used with a first function. Thus, not all limitations of Claim 1 are taught or suggested by *Crisan* or *Chang*, either individually or in combination.

Claim 1 also recites **“storing the result data obtained from the source in a format that reflects the data type information from the second function.”** The Office Action states that *Crisan* does not specifically teach the claimed limitation, but the limitations may be found in *Chang* under (col. 10, lines 10-50; col. 7, lines 54-67). In *Chang*, a UDF may be associated with a standard data type “through the signature of its parameter list” (*Chang*, col. 7, lines 57-58). Indeed, the Office Action itself states, “UDFs convert XML files into a storage format with *predefined* attribute values” showing that the attributes have pre-defined types, and not **“data type information from the second function.”** As such, at least one other limitation of Claim is not taught or suggested by *Crisan* or *Chang*, either individually or in combination.

It is respectfully submitted that, for at least the above reasons, *Crisan* or *Chang*, either individually or in combination does not teach or suggest the above-bolded elements of Claim 1. As at least one element is not disclosed, taught, or suggested by *Crisan* or *Chang*, Claim 1 is patentable over the cited art and is in condition for allowance.

CLAIMS 16 and 22

Claim 16 contains limitations similar to Claim 1 except Claim 16 is recited in computer system format. Therefore, Claim 16 is patentable for at least the reasons given above with respect to Claim 1.

Claims 22 contains limitations similar to Claims 1 except Claim 22 is recited in computer-readable medium format. Therefore, Claim 22 is also patentable for at least the reasons given above with respect to Claim 1.

DEPENDENT CLAIMS

Claims 4, 5, 9, 25-28, and 30 directly depend upon independent Claims 1, 16, and 22. Therefore, these dependent claims also include the limitations of the independent claim upon which they depend. Thus, dependent Claims 4, 5, 9, 25-28 and 30 are patentable for at least those reasons given above with respect to Claims 1, 16, and 22. In addition, each of Claims 4, 5, 9, 25-28 and 30 introduce one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time,

although the Applicants reserve the right to further point out the differences between the cited art and the novel features recited in the dependent claims.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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